DOE/NCI JOINT MEETING

What is the Demand for Research Radionuclides and How Can It be Met?

Richard C. Reba, M.D.
Biomedical Imaging Program/NCI/NIH
Rebar@mail.nih.gov

John Pantaleo
Office of Isotopes for Medicine and Science/NE/DOE
John.Pantaleo@hq.doe.gov

"Feel free to hydrate during my presentation."

NIH/DOE JOINT WORKSHOP AGENDA

What is the Demand for Research Radionuclides and How Can It Be Met?

Introduction and Welcome **-** The Issues and Objectives of the Meeting- **Richard Reba**

Isotope Demand 2002 - 2010

Bio-Tech Systems Report **- Marvin Burns**
CORAR Isotope Demand Projections **- Roy Brown**
NIH Support of Research Using Isotopes- **Norman Coleman**
DOE, Office of Life Sciences Isotope Use- **Peter Kirchner**
NEPRI Notice of Program Results **- John Pantaleo**

Isotope Supply 2002 - 2010

University Supply, Reactor Model- **Al Ketring,** MURR

University Supply, Accelerator Model**- Michael Welch,** Wash Univ

DOE- Office of Isotopes, Medicine and Science Role- **Owen Lowe**

Open Discussion: Qs & As - **Reba/Pantaleo**

1. Review of the Issues and Objectives- Richard Reba
2. What role should NIH play to support the availability of research isotopes?

1. Separated Isotopes: Vital Tools for Science & Medicine, A Report of the National Research Council, National Acad Press, Wash, D.C., **1982.**
2. Adelstein SJ, Manning JF, eds. Isotopes for Medicine & the Life Sciences. Comm on Biomedical Isotopes. Div. of Health Sciences Policy, National Academy Press, Wash, D.C., **1995.**
3. Ketchum LE, Green MA, Jurisson SS: Research Radionuclide Availability in No Am. J. Nucl. Med. 38 (7): 15N-19N, and 38(8): 21N-48N, 1997.
4. Medical Isotope Workshop, Spicer KM, et al., eds: Med Coll of South Carolina, Pub, **1998.**
5. Burns M.: The U.S. Market for Radiopharmaceuticals. Report 120, Bio-Tech Systems, Inc., Las Vegas Nevada, 89121. Excerpted in Diagnostic Imaging, **Nov. 2001**.
6. Wagner HN Jr, Reba RC, et al.: Expert Panel Forecast of Future Demand for Medical Isotopes. **March, 1999**, Published on line by DOE and viewed at URL <http://www.ne.doe.gov/nerac/isotopedemand.pdf>
7. Reba RC, Atcher RW, Bennett RG, et al.: Final Report, NERAC Subcommittee For Isotope Research & Production Planning. **April 2000,** pp 1-32. Published on line by DOE and viewed at URL http://www.nuclear.gov/nerac/finalisotopereport.pdf

Isotopes, both radioactive and stable, make important contributions to research, medicine, and industry in the United States and **throughout the world**.

Radionuclides have a fundamental role in biomedical research, drug development and in the application of many diagnostic and therapeutic processes in medicine, especially in oncology, cardiovascular diseases and neuropsychiatric disorders.

Each year, U.S. physicians employ radiopharmaceuticals in an estimated 13 million diagnostic and therapeutic procedures and another 100 million laboratory tests.

Nearly one in three patients admitted to a U.S. hospital undergoes a test or treatment that depend on radiolabeled compounds.

EXPERT PANEL: CONCLUSION #1

There is only a debate with some differences of opinion about specific nuclides or the rate of growth of medical radionuclide usage. These reports all identify the same trends:

REPORT AGREEMENTS

- Predict increased growth in isotope use
- Expected shortages of some major nuclides
- Lack of a reliable supply of research isotopes produced at a reasonable cost
- Deteriorating DOE infrastructure
- There is an over-dependence on non-U.S. radionuclide production

Reactor Research Radionuclide Production Facilities In The U.S.

- ATR Idaho Nat'l Eng Lab/I4:
- HFIR Oak Ridge:
- Missouri Univ. Research Reactor:
- UC Davis:

- Others that could: MIT, Texas A&M, Univ. Rhode Island, + + others